
**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Spectrum Policy Task Force Seeks)	
Public Comment on Issues Related to)	ET Docket No. 02-135
Commission's Spectrum Policies)	
)	

**COMMENTS
OF THE
UNITED TELECOM COUNCIL**

Jill M. Lyon
VP & General Counsel
United Telecom Council
1901 Pennsylvania Ave., NW
Fifth Floor
Washington, DC 20006
202-872-0030

Jeffrey Sheldon, Esq.
McDermott, Will and Emery
600 13th St., NW
Washington, DC 20005
202-756-8082

Dated: July 8, 2002

Summary

The challenge facing the Spectrum Policy Task Force is to develop recommendations that can take advantage of new and future technologies while recognizing that a single approach to spectrum allocation cannot meet the needs of all users, or indeed, the Commission's full obligations under law.

UTC questions whether market-based approaches to spectrum allocation are always a preferred solution, since these policies do not, and cannot, take into consideration non-economic factors such as public safety, Homeland security and maintenance of critical infrastructure and essential public services. Auctions are not well-suited to distributing spectrum to entities whose use of spectrum is critical to meet public service obligations, but for whom uncertainty and geographic-based licensing is inappropriate.

UTC supports policies that provide compatible licensees with greater flexibility; for example, UTC urges the elimination of regulatory barriers preventing critical infrastructure and traditional public safety entities, and federal and non-federal users, from sharing compatible systems, especially to meet emergency response needs. UTC applauds and supports fully the Commission's recent efforts in this area.

UTC recommends that: (1) electric, water and gas utilities and other "public safety radio services" be allocated a small amount of spectrum to eliminate the channel contention that now exists among incompatible users in the "shared" bands; (2) the FCC consider adoption of receiver standards to help reduce the harmful effects of interfering signals; and (3) the FCC adopt specific guidelines and procedures for the resolution of interference disputes. While UTC supports the efficient use of all radiofrequency spectrum, efficiency has a different meaning for public safety radio service entities, relating more to reliable service than users per channel. Finally, current concepts of "priority access service" being developed in the commercial mobile radio service market are generally viewed as not only inadequate, but completely inappropriate to meet public safety/public safety requirements, as commercial systems generally are not functioning when utilities need communications the most.

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Pursuant to Public Notice, DA 02-1311, released June 6, 2002, the United Telecom Council (UTC) is pleased to offer the following comments on the issues raised by the Commission's Spectrum Policy Task Force (Task Force) in its evaluation of spectrum policies and recommendations for possible improvements. There is a heightened sense of urgency on matters relating to the availability of spectrum to meet public safety, homeland security, and preservation of critical infrastructure. UTC is therefore pleased to offer the following initial comments, and looks forward to providing additional assistance to the SPTF in its efforts to examine these important issues.¹

¹ On June 10, 2002, UTC requested extension of the Comment deadline to permit development of more comprehensive comments on these issues. However, by Order, DA 02-1456, released June 21, 2002, the Commission denied UTC's request. UTC is therefore, of necessity, providing limited comments at this stage and intends to supplement its position on these issues.

UTC is the national representative on communications matters for the nation's electric, gas, water and steam utilities, and natural gas pipelines. UTC's members are responsible for developing and maintaining a large part of the nation's critical infrastructure. Approximately 1,000 such entities are members of UTC, ranging in size from large combination electric-gas-water utilities that serve millions of customers, to smaller rural electric-cooperatives and water districts that serve only a few thousand customers each. All utilities and pipelines depend on reliable communications in carrying out their important public service obligations, and many operate private wireless systems for mobile voice and data, voice and data transport, and fixed control and telemetry applications. UTC is therefore very interested in developing recommendations that will provide for more rational spectrum management policies that will truly support national interests.

The Task Force has raised a number of fundamental questions about the way rights to use spectrum are defined by the Commission and granted to users. In UTC's view, the challenge facing the Task Force is to develop recommendations that can take advantage of new and future technologies while recognizing that most of the currently usable spectrum is occupied by users who, in the case of utilities, for example, have invested upwards of millions of dollars each in developing reliable wireless systems designed to meet their specific communications requirements.

Market-Oriented Allocation and Assignment Policies

The Task Force has asked whether the Commission could move from current spectrum allocations to more market-oriented allocations, citing two models that have been used so far toward this end: (1) granting existing licensees flexibility so that incumbents can migrate spectrum to its highest value use, and (2) reallocating bands for flexible use with geographic service areas and auctioning overlay licenses to new and existing licensees.

UTC questions the Notice's apparent assumption that market-oriented allocations are the preferred solution to meet all spectrum needs. From a purely economic standpoint, without considering externalities or potential market failures, flexible use policies and overlay licensing create situations in which new commercial services can be implemented to displace existing spectrum uses. However, if the definition of "highest value" use of the spectrum is not limited to commercial services, then these policies do not, and cannot, take into consideration non-economic factors such as public safety, Homeland security and maintenance of critical infrastructure and essential public services.

Site-licensing is a very efficient model for assigning spectrum for operations of critical infrastructure industries, whose service territories are largely dictated by state and local law. The service area of a commercial carrier is defined by its authorized radio "footprint" – and its actual service area is generally much smaller, limited to areas where the general public is located in sufficient density to provide profitable subscribership. The service area of a utility

is defined by the location of its underlying utility infrastructure and the territory in which it is responsible for delivering essential public services – and its critical wireless system must provide coverage of this entire area. Site-licensing, while administratively more involved than geographic licensing, allows the utility to tailor its spectrum usage to the area it must serve. Geographic licensing puts a utility at risk of being unable to secure a sufficient portfolio of licenses to adequately cover its service territory, or conversely, securing authorization for areas where it has no interest in developing radio systems.

Site-licensing, premised on prior coordination and first-come, first-served licensing policies, has largely eliminated the potential for mutually exclusive applications in the radio bands primarily used by utilities. Overlay or geographic licensing, almost by definition, creates situations in which mutually exclusive applications are filed, with the Commission licensing to the highest bidders in an auction. Auctions have proven to be a useful tool to assign spectrum quickly to highly motivated commercial carriers and to generate additional federal revenue. However, they are not well-suited to distributing spectrum to entities whose use of spectrum is even more critical to meet greater public service obligations, but who cannot suffer the uncertainty of obtaining spectrum by this means, cannot justify the much higher cost to other regulating agencies such as state utility commissions and for whom the geographic-based licensing of an auction is badly designed.

As a general matter, UTC supports policies that provide existing licensees with greater flexibility. In the case of utilities, for example, the current Rules do

not readily permit utilities and Public Safety agencies to jointly develop and license radio systems. A number of such entities have developed very reliable and spectrally efficient systems through Rule waiver, but the Rules should actually encourage development of such systems instead of establishing regulatory "walls" between these entities with very compatible spectrum needs. UTC also applauds the Commission's recent closer work with the National Telecommunications and Information Administration (NTIA), and hopes that similar "walls" between federal and non-federal spectrum use also will be brought down to enable interoperable systems shared among compatible users, especially emergency responders.

Unfettered reliance on market forces to allocate spectrum will not promote spectrum services that are needed for the common good. Despite the robust competitive market for commercial mobile radio services, the vast majority of carriers have not developed radio systems that would provide the level of service and types of features needed by Public Safety and critical infrastructure industries. Congress has recognized the unique situation of utilities, pipelines, railroads, and other elements of the nation's critical infrastructure by defining them as "public safety radio services" in Section 309(j)(2) of the Communications Act (the "Act") and exempting them from participating in auctions for spectrum licenses. That uniqueness is based on (1) their typically expansive operating service areas; (2) their reliance on wireless communications to fulfill day-to-day and emergency communications needs without a separate "profit" motive from use of the spectrum; (3) their need for highly reliable service surpassing that

typically available from commercial carriers; (4) their need to have channels readily available, both on a day-to-day operational basis and more importantly, during and after disaster or disruption of essential public services; (5) the importance of minimizing interdependencies among providers of critical infrastructure services so that disruptions to one do not cascade to others and exacerbate restoration efforts; and (6) the fact that many such providers are governmentally owned or heavily regulated and cannot be expected to outbid all other entities that are vying to use the spectrum resource with pure profit motive.²

Unlike traditional public safety services, critical infrastructure industries currently have no spectrum allocated for their exclusive use. All spectrum bands available to utilities are shared with other private wireless users. In many cases, operators of commercial radio systems, economically motivated to load channels without regard to impact on individual users, are also authorized to license channels currently licensed to utilities in the same operating areas. As demand increases in these bands, the ambient noise floor causes rising levels of interference that threaten critical infrastructure systems, personnel safety, and ultimately, the public. Thus, utilities are already being victimized by a market failure brought about by flexible allocation policies that do not adequately account for the specialized nature of utility operations. Open-eligibility licensing and flexible technical standards in bands used by utilities have not led to the creation of new service offerings geared to utility use. Rather, they have led to

² For a more detailed description of utilities' spectrum requirements, see Current and Future Spectrum Use by the Energy, Water, and Railroad Industries, Response to Title II of the Department of Commerce, Justice and State, the Judiciary and Related Agencies Appropriations

development of radio systems that threaten the continued viability of the radio systems utilities, pipelines, and other critical infrastructure industries have developed to meet their specialized needs.

Experience has shown that, even in today's highly competitive wireless market, carriers generally are unwilling to develop specialized services to meet utilities' needs for high reliability, ubiquitous coverage, immediate channel accessibility, and specialized features such as group dispatch. Moreover, because utilities have a public service obligation to maintain and restore energy and water distribution services on a 24/7 basis, they are extremely reluctant to assume the risk that their crews would be unable to communicate for weeks or (more likely) months should their service provider cease operations or discontinue the type of service they require. Even if competitive alternatives were available, transitioning a utility to a different carrier would likely entail significant cost and delay, posing great risk to the utility and its consuming public. UTC therefore urges the Task Force to recognize that, even outside the exemption provided by the Act, market-oriented policies, standing alone, are unlikely to provide the wireless communications and control services needed by Public Safety and critical infrastructure industries.

Interference Protection

UTC's member companies are painfully aware of the problems associated with harmful interference. As noted above, utilities currently are forced to operate

in bands that are shared with lesser priority services and with no significant ability to control the level of interference to which these other users subject them. In some bands (e.g., 150-174 MHz and 450-470 MHz), this is due to the "shared" nature of the frequency assignments and the Commission's policies that place primary responsibility for interference mitigation on the prior-coordination process and mutual cooperation of all co-channel and adjacent channel licensees. Commercial systems licensed on the same channel have the potential to overwhelm utility communications due to increased traffic levels and channel occupancy.

While utilities are expected to design their radio systems with just enough channels to meet the anticipated loading from their own mobiles, they do not have "excess channels" to which they can divert traffic if their primary channels become overwhelmed by other users. Commercial carriers, by contrast, will license as many channels as they can coordinate and will load those channels with as many customers as they can, regardless of traffic levels or channel occupancy, on the theory that the "marketplace" will decide when the carrier's system is fully loaded. This creates a fundamental conflict between the systems, increases interference levels, and puts the utility system, and thus its personnel and the general public, at risk.

In other bands (such as the 800 MHz and 900 MHz bands), a utility may receive "exclusive" licenses following successful frequency coordination, thereby ensuring (at least theoretically) that it will have interference-free operation within

the protected contours of its system. Recent events have shown, however, that flexible licensing and usage policies can lead to situations where a co-channel user claims that it has the right to operate, and cause harmful interference to other licensees, on the argument that its system is operating in full compliance with the FCC's Rules. Obviously, there is something wrong with allocation and licensing policies that would allow a licensee operating in "full compliance" with the FCC's Rules to cause interference to public safety communications.³

UTC therefore recommends that: (1) electric, water and gas utilities and other "public safety radio services" be allocated exclusive frequency bands in order to eliminate the channel contention that now exists among incompatible users in the "shared" bands; (2) the FCC consider adoption of receiver standards to help reduce the harmful effects of interfering signals; and (3) the FCC adopt specific guidelines and procedures for the resolution of interference disputes, including assignment of burdens, timelines for resolution and mandatory use of alternative dispute resolution.

Spectral Efficiency

With advances in radio technology and the different types of radio systems in operation, it is difficult to benchmark spectrum efficiency. For commercial systems, one could measure spectrum efficiency by the number of users that could simultaneously access the network or use the network in a given amount of time in a given area. To a large extent, the Commission's spectrum auctioning

³ See, e.g., UTC's Comments in the Matter of Improving Public Safety Communications in the

policies provide strong incentives to carriers to implement efficient technologies to maximize the number of users they can serve.

However, for radio systems operated by public safety radio services, where spectrum value is measured in terms of channel availability, reliability, and ubiquitous coverage, spectrum efficiency has a completely different meaning. In this context, spectrum efficiency must be viewed from a more subjective and qualitative standpoint. Spectrum efficiency in this context means that no delay in channel access, no degradation of signal quality, nor any loss of coverage will impede the fulfillment of the licensee's public safety and public service obligations. UTC appreciates the Commission's desire to maximize the use of the spectrum, but also reminds the Commission of its statutory (as well as public policy) obligation to regulate wireless "for the purpose of promoting safety of life and property."⁴

The Task Force has also asked whether implementation of fees (on the basis of Hz per square mile per minute, or Hz per population coverage) or adoption of receiver standards could provide incentives to use spectrum efficiently. As with general standards related to spectrum efficiency, such concepts may have relevance in the case of commercial services involving use of spectrum with a direct profit motive. However, it would not represent sound public policy to impose such a financial burden on public safety and public service licensees who do not use spectrum for profit, but to deliver a public good safely

800 MHz Band, WT Docket No. 02-55, filed May 6, 2002.

⁴ 47 U.S.C. §§151 & 332(a).

and efficiently. For these entities, the mere investment in radio equipment, and the expenditures attendant to operating a system, effectively limit the amount of spectrum these entities use. With no ability to profit from spectrum holdings per se, there is no incentive to hold spectrum that will not be put to productive use in support of public safety/public service obligations.

However, even in these situations, a user fee would place the Commission in the situation of determining how to set the fee such that it disincentivizes a licensee from acquiring more spectrum than it reasonably needs or can use, while not being so high that it effectively deters a user from investing in even an "efficient" communications system. To the extent the Commission's goal is to rely more on marketplace incentives, maintenance of an appropriate schedule of user fees would require the Commission to become and remain involved in the market.⁵ This runs counter to the notion of relying on the marketplace to manage the spectrum to the greatest possible extent.

Public Safety Communications

UTC agrees with the Task Force's assessment that "Public safety and public service agencies at the federal, state and local levels, as well as critical infrastructure industries, require highly reliable radio-based communications

⁵ Moreover, once a user fee program is established, its original goal of promoting spectrum efficiency could be easily superseded by government fiscal policy to maximize return to the U.S. Treasury. The recent passage of the Auction Reform Act of 2002, Pub. L. No. 107-195, represents a tacit acknowledgment by Congress that laws originally intended to promote efficient spectrum licensing can lead to bad public policy if those same laws are instead used in an attempt to balance the Federal budget.

services."⁶ Recent events have illustrated dramatically why public safety agencies and public service utilities operate proprietary wireless systems. Although day-to-day traffic on these systems might be perceived as "routine," that routine traffic ensures the very security, safety, and quality of life we enjoy in the United States. That routine traffic ensures that potential catastrophes do not happen. Radio spectrum planning should not view the spectrum needs of public safety and public service organizations only by reference to their ability to respond to emergencies; rather, it should ensure they have the tools they need to prevent or mitigate problems in the first place.⁷

As noted above, one of the essential characteristics of a utility radio system is the ready availability of communications channels. Policies that would involve sharing mechanisms between public safety radio services and other users would have to ensure that absolute control is maintained by the public safety/public service licensee and that channel access is not compromised through such sharing. Current concepts of "priority access service" being developed in the commercial mobile radio service market are generally viewed as not only inadequate, but completely inappropriate to meet public safety/public safety requirements. Moving to a higher position in queue for the next available channel assumes that the public safety/public service user is blocked from accessing a channel and must therefore wait in a queue. This is unacceptable for anything more than absolute emergencies when no other means of

⁶ DA 02-1311, p. 6.

⁷ For example, President Bush has declared his intent to create a Department of Homeland Security, not to defend the United States after an attack (for which the U.S. already has a strong

communication are available. Even more importantly for electrical utilities, commercial carrier systems are not designed to operate during power outages and have minimal backup facilities. The highest priority is meaningless when the system is down at the time personnel need it the most, i.e., when working to restore power.

UTC recognizes that someday, it may be possible for widely deployed radio equipment to allocate channels dynamically among disparate radio systems and users, adjust bandwidth as needed, and provide for priority access on an as-needed basis. However, the current reality is that billions of dollars of radio equipment is deployed on specific frequency assignments, and many companies have invested additional billions of dollars in securing spectrum rights for exclusive spectrum allocations. Moreover, entities that rely on wireless technologies to support mission-critical applications must have a sense of regulatory certainty so that appropriate decisions can be made on new technology investment. Implementation of new allocation policies should be announced with sufficient lead times that existing users have an opportunity to amortize existing equipment and adequately plan for the future.⁸

Conclusion

UTC applauds the Commission for taking the initiative to review current spectrum management policies and to consider novel ways of better managing spectrum in the public interest. For too long, spectrum policy has been dictated

Department of Defense), but to preclude attacks from happening.

by the desires of commercial carriers with little regard for the use of spectrum to support Public Safety and the maintenance of the nation's critical infrastructure. The current inquiry presents an opportunity to re-examine national priorities, particularly in light of our heightened concern with Homeland security, and to create policies that will ensure the proper balance of spectrum resources between those entities charged by law with providing essential public services, and the general consuming public.

UTC recognizes that advances in radio technology could create opportunities for radically different ways of allocating spectrum and assigning users (perhaps even dynamically) to that spectrum. However, until such technologies are proven out in the marketplace, widely available, and specifically configured to accommodate needs for coverage, reliability, and immediate access, both in emergencies and in day-to-day use, UTC urges the Commission not to sacrifice public safety by moving too quickly to complete reliance on market-place solutions.

⁸ Critical infrastructure entities generally deploy, maintain and upgrade their wireless systems on a multi-year schedule, often planning and budgeting five years or more in advance.

WHEREFORE, THE PREMISES CONSIDERED, the United Telecom Council respectfully requests that the Task Force adopt recommendations in this proceeding consistent with the views set forth above.

Respectfully submitted,

UNITED TELECOM COUNCIL

By: _____/s/_____

Jill M. Lyon
VP & General Counsel
United Telecom Council
1901 Pennsylvania Ave., NW
Fifth Floor
Washington, DC 20006
202-872-0030

Jeffrey Sheldon, Esq.
McDermott, Will and Emery
600 13th St., NW
Washington, DC 20005
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